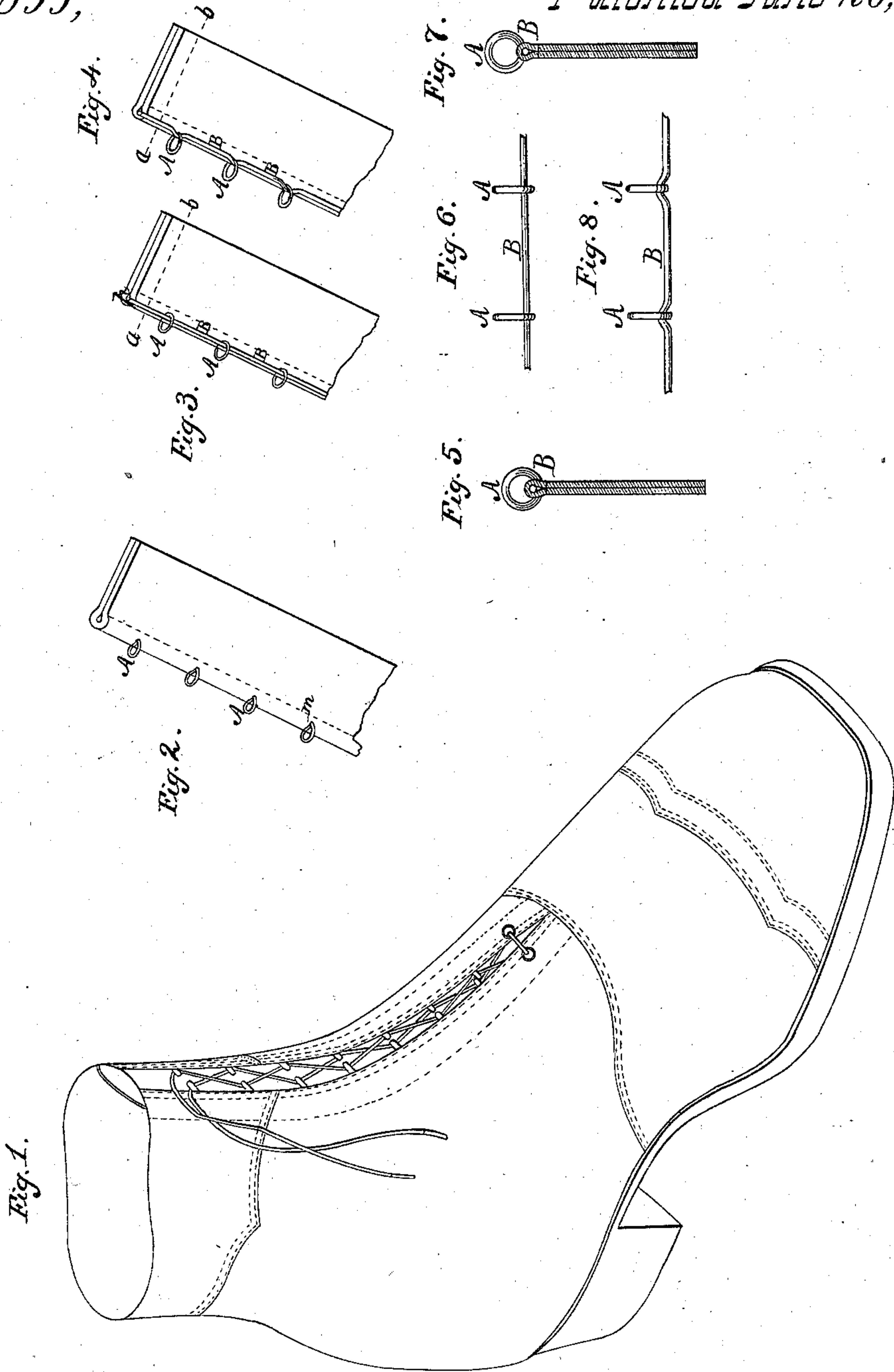


*C. Goodyear, Jr.,*  
*Shoe Fastening,*

*No 55,853,*

*Patented June 26, 1866.*



*Witnesses*

*Jos. L. Coomb*  
*m Bailey*

*Inventor*

*Cha. Goodyear Jr*

# UNITED STATES PATENT OFFICE.

CHARLES GOODYEAR, JR., OF NEW YORK, N. Y.

## IMPROVED LACING FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. 55,853, dated June 26, 1866.

*To all whom it may concern:*

Be it known that I, CHARLES GOODYEAR, Jr., of New York, in the county and State of New York, have invented certain new and useful Improvements in Shoe-Lacings; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings.

My invention relates to that method of lacing or lacing device for which Letters Patent of the United States were issued to Jacob Autenreith on the 6th of January, 1863, and re-issued to me February 20, 1866, the main feature of which consists in having the lacing-eyelet so arranged that the cord is run through the same without traversing the leather of the shoe; and the object of my invention is to effect certain improvements whereby the construction of the lacing device is simplified and cheapened, the lacing-eye may be applied to the shoe with facility, and the liability of the eyelet to become separated or torn from the welt is in a great degree avoided.

To effect this I form the lacing device of rings or eyelets strung upon a piece of thin flexible wire. This wire is placed in the welt, in which are formed incisions at right angles to the edge of the welt equaling in number the rings or eyelets, and each ring or eyelet is inserted in and protrudes from the corresponding incision in the welt, the rings thus standing at right angles to the edge of the welt and to the wire by which they are held. The wire may be passed through the rings either before or after the welt is turned. In the former case, the rings being inserted in the corresponding incisions in the welt, the wire is passed through each ring and its ends are secured to the welt, after which the welt may be turned and bound together. In the latter case the welt is sewed at a sufficient distance from its edge to allow the eyelets to be placed in the incisions on the edge, after which the wire is inserted at one end of the welt and runs through each ring until it shall reach the other end, where it is properly secured and fastened.

In order to form a larger lacing-eye the wire, at the point where each ring or eyelet protrudes from the edge of the welt, may be bent toward the incision in the welt, in order to

allow the eyelet-ring to extend out as far as possible from the edge.

The advantages which result from this method of applying lacing-eyelets to shoes are many. The eyelet-ring is held by a wire placed between the two sheets or strips of leather and along the edge of the welt, which wire, being thin and flexible, conforms to the shape of the foot, and does not in the least discom- mode the wearer, even when the boot is tightly laced, whereas the shank or link by which the eyelet, by any of the methods now in use, is fastened or riveted to the shoe extends some distance back from the edge of the welt, and being stiff and unyielding is often productive of discomfort.

By this method no part of the lacing device, with the exception of the eyelet-ring, is shown, the remaining parts being placed between the folds of the welt or upper, and thus concealed. No incision or cut, therefore, is made in the welt, except the transverse incisions on its edge through which the eyelet-rings protrude, and this, of course, adds not only to the appearance but the strength of the shoe.

Another advantage is, that by the arrangement, as shown, of stringing or supporting the eyelets on a continuous piece of wire the strain on each eyelet does not come altogether upon that portion of the welt or upper in its immediate proximity, but is, in a great degree, distributed throughout the whole welt, for when, by pulling the lacing-cord, the eyelet-rings are drawn together, the strain will come primarily upon the wire, which, as it extends from one end of the welt to the other, will distribute the strain equally, and will thus prevent any portion of the welt from being subjected to undue force.

To enable those skilled in the art to make and use my invention, I will now proceed to describe the manner in which the same is or may be carried into effect, by reference to the accompanying drawings, in which—

Figure 1 represents a perspective view of a shoe with my improvement applied; Fig. 2, a perspective view of a portion of a welt with my improved lacing attached. Figs. 3 and 4 show in detail the construction of the lacing device, the welt surrounding the same being represented in both figures in red lines, the



wire in Fig. 4 being bent at the points where the rings protrude from the welt, as above explained. Figs. 5 and 7 are transverse sectional views, on an enlarged scale, on the line *a b*, of the welt and lacing device shown respectively in Figs. 3 and 4. Figs. 6 and 8 are elevations, on an enlarged scale, of the wire and eyelet-rings shown in Figs. 3 and 4 respectively.

As shown in the drawings, the lacing device consists of a series of rings or eyelets, A, strung on a wire, B, of any suitable form and dimensions, either straight, as shown in Fig. 3, or corrugated, or bent at intervals, as seen in Fig. 4.

When the device is to be fitted to a shoe the eyelet-rings may be first inserted in the incisions *m*, Fig. 2, in the welt D, made so as to lie transversely to the edge of the welt. If the folds of the welt are not already sewed together the wire B is readily passed through each of the rings, after which it is secured to the leather and the welt is then bound together. If the welt be already sewed, as shown in the drawing, one end of the wire is inserted in the welt at *p*, Fig. 3, and the wire is then pushed toward the other end of the welt, passing through each ring, as shown in the figure. In case a corrugated or bent wire be used, as shown in Fig. 4, the wire should be passed through the rings and placed in its proper position between the folds of the welt before the same are sewed together.

The advantage which arises from the use of the corrugated wire will be seen more plainly by reference to Figs. 5 and 7, the former representing a transverse section of the welt in which the straight wire is employed, and the latter a transverse section of the same provided with a corrugated wire.

By comparing the lacing-eyes it will be seen that by the use of the corrugated wire, which, as above explained, is bent outward at each incision in the edge of the welt, so as to permit the ring to extend or protrude from the edge as far as possible, a much larger eye is obtained with the same size of ring than in the other case. Instead of placing the eyelet-rings on

the edge of the welt they may be secured to the face of the welt or upper at right angles thereto, and transversely to the length of the shoe, and they may be fastened in this position by means of the wire, as described, or by other suitable means, or each ring may be separately fastened to the upper, and they may be sewed or secured in any other manner. I, however, prefer the arrangement shown in the drawings, as it has been found by experience to be the cheapest and most efficacious.

Having thus described my improvements, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The method herein described of applying lacing-eyelets to boots or shoes, by securing and holding a series of eyelet-rings in their proper positions, as set forth, by means of a single holding device, which serves as the common support of said rings, as and for the purposes herein shown and described.

2. As lacing-eyelets, rings, in combination with one or more fastening devices, as set forth, holding the said rings to the edge or to the face of the welt or upper, at right angles thereto, and transversely to the length of the shoe, as and for the purposes herein described.

3. In combination with rings for forming the lacing-eyes, as described, and for the purpose of holding the same in their proper positions, as set forth, the wire embedded between the folds of the welt or two thicknesses of leather, so that the eyelets may be strung or held on a support common to all, as and for the purposes herein shown and described.

4. In combination with the eyelet-rings, as described, the wire corrugated or bent at the points of support of the rings, substantially in the manner and for the purposes herein set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

CHAS. GOODYEAR, JR.

Witnesses:

A. POLLOK,  
C. R. SHERWOOD.